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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/528,513 | 03/18/2005 | Tadashi Okuto | SNDN.P-002-USNP | 4366 |

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| EXAMINER | |
|---|---|
| MARTIN, ANGELA J | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1795 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 08/22/2008 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket-oppedahl@oppedahl.com

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/528,513 | OKUTO ET AL. | |
| | Examiner | Art Unit | |
| | ANGELA J. MARTIN | 1795 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *02 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-14 and 16-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 and 16-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

**DETAILED ACTION**

This Office Action is responsive to the Appeal Brief filed on June 2, 2008. Prosecution on the merits of this application is reopened.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 6, 13, 14 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. The term "at a later time" in claims 6, 13, 14 is a relative term which renders the claim indefinite. The term "at a later time" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

1. Claims 1, 5, 6, 10, 16, 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Ren et al., U.S. Pat. No. 6,981,877 B2.

Rejection of claims 1, 5, 16, 19 drawn to a direct methanol fuel cell; claims 6, 10 drawn to a method for use with a direct methanol fuel cell.

Ren et al., teach direct methanol fuel cell apparatus comprising: a fuel container; an anode adjacent the fuel container; a proton exchange membrane adjacent the anode; a cathode adjacent the proton exchange membrane; an oxygen supply adjacent the cathode (col. 5, lines 49-67; Fig. 1A, ref. 8 anode); the fuel container containing methanol in water at a first concentration (col. 9, lines 9-17); a cartridge selectively communicatively coupled with the fuel container; the cartridge containing fluid comprising methanol in water at a second concentration, the second concentration higher than the first concentration (col. 10, lines 1-8). The apparatus of claim 1 wherein the selective communicative coupling comprises a pump actuable by electronic means, said pump pumping fluid from the cartridge to the container (col. 10, lines 66-67 and col. 11, line 1). A method for use with a direct methanol fuel cell, the method comprising the steps of: bringing a first solution of methanol in water at a first concentration into contact with an anode, the first solution contained within a container (col. 9, lines 5-17); bringing oxygen into contact with a cathode, the cathode adjacent a proton exchange membrane and the proton exchange membrane adjacent the anode (col. 5, lines 49-67); bringing a cartridge into communicative coupling with the container, the volume of the container being greater than volume of cartridge (Fig. 7, ref. 700 fuel container, ref. 702; col. 9, lines 63-67 and col. 10, lines 1-5), the cartridge containing a second solution of methanol in water at a second concentration, the second concentration higher than the first concentration (col. 9, lines 9-17). The method of claim 6 wherein the step of

bringing the cartridge into communicative coupling with the container comprises actuating a pump, said pump pumping fluid from the cartridge to the container (col. 10, lines 66-67 and col. 11, line 1). The cartridge selectively communicatively coupled with the fuel container is stationary with respect to the fuel container (col. 9, lines 63-67 and col. 10, lines 1-5).

Thus, the claims are anticipated.

3. Claims 11-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Beckmann et al., U.S. Pat. No. 6,737,181 B2.

Beckmann et al., teach a direct methanol fuel cell apparatus comprising: a fuel container; an anode adjacent the fuel container; a proton exchange membrane adjacent the anode; a cathode adjacent the proton exchange membrane; an oxygen supply adjacent the cathode (col. 2, lines 26-32); the fuel container containing methanol in water (col. 3, lines 20-30); and a stirrer (mixing pump) within the fuel container (col. 3, lines 20-34). The apparatus of claim 11 further comprising electronics operating the stirrer at intervals as a function of measurements made regarding the fuel cell apparatus (col. 4, lines 9-27). A method for use with a direct methanol fuel cell, the method comprising the steps of: bringing a solution of methanol in water into contact with an anode, the solution contained within a container; bringing oxygen into contact with a cathode, the cathode adjacent a proton exchange membrane and the proton exchange membrane adjacent the anode; at a later time, stirring the solution (col. 4, lines 9-27), wherein the stirring occurs as a result of a stirring by a stirrer contained within the container (col. 4, lines 9-27).

Thus, the claims are anticipated.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2, 3, 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ren et al., U.S. Pat. No. 6,981,877 B2.

Ren et al., teach direct methanol fuel cell apparatus as described above.

Thus, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because although the prior art of record does not recite the apparatus of claim 1 wherein the second concentration is at least double the first concentration; the apparatus of claim 2 wherein the second concentration is at least triple the first concentration; the method of claim 6 wherein the second concentration is at least double the first concentration; the method of claim 7 wherein the second concentration is at least triple the first concentration; "generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are

disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (MPEP 2144.05).

6. Claims 4, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ren et al., U.S. Pat. No. 6,981,877 B2, in view of Becerra et al., U.S. Pat. Application Pub. 2004/0072049.

Ren et al., teach an apparatus as described above.

Becerra et al., teach the selective communicative coupling comprises a pushing pin actuable by a human user, said pin puncturing the cartridge (0044). The method of claim 6 wherein the step of bringing the cartridge into communicative coupling with the container comprises a human user pushing a pin, said pin puncturing the cartridge (0044). It teaches a safety lock (0056). It teaches the pin is movable in relation to the fuel container (0044).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to insert the teachings of Becerra et al., into the teachings of Ren et al., because Becerra et al., disclose that a "needle 223 may be used to puncture the seal 224 as well as the flexible bladder 204 in order to draw fuel out of the bladder into the DMFC."

***Claim Rejections - 35 USC § 102/103***

7. Claim 14 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Beckmann et al., U.S. Pat. No. 6,737,181 B2.

Beckmann et al., teach a method for use with a DMFC, method comprising steps of bringing a solution of methanol in water into contact with an anode (col. 1, lines 62-67 and col. 2, lines 1-4), solution within container; bringing oxygen into contact with a cathode (col. 2, lines 7-9), cathode adjacent to proton exchange membrane and proton exchange membrane adjacent to anode; wherein the stirring occurs as a result of a human user moving the fuel cell while it is in use (col. 2, lines 47-50).

Thus, the claim is anticipated.

However, if the claim is not anticipated, in the alternative, the claim is obvious because if a human moves the fuel cell while it is in use, inherently, stirring would occur during its movement.

***Response to Arguments***

2. Applicant's arguments filed 6/2/08 have been fully considered but they are not persuasive. Applicant argues that Ren does not teach an anode adjacent the fuel container; however, Fig. 1A discloses an anode adjacent the fuel container. Applicant argues that Ren does not teach a push pin; however, the 103 Rejection describes Becerra as disclosing a push pin.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANGELA J. MARTIN whose telephone number is (571)272-1288. The examiner can normally be reached on Monday-Friday from 10:00 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AJM
/Angela J. Martin/
Examiner, Art Unit 1795

| Application Number | Application/Control No. | Applicant(s)/Patent under Reexamination | |
|---|---|---|---|
| | 10/528,513 | OKUTO ET AL. | |
| | Examiner | Art Unit | |
| | ANGELA J. MARTIN | 1795 | |